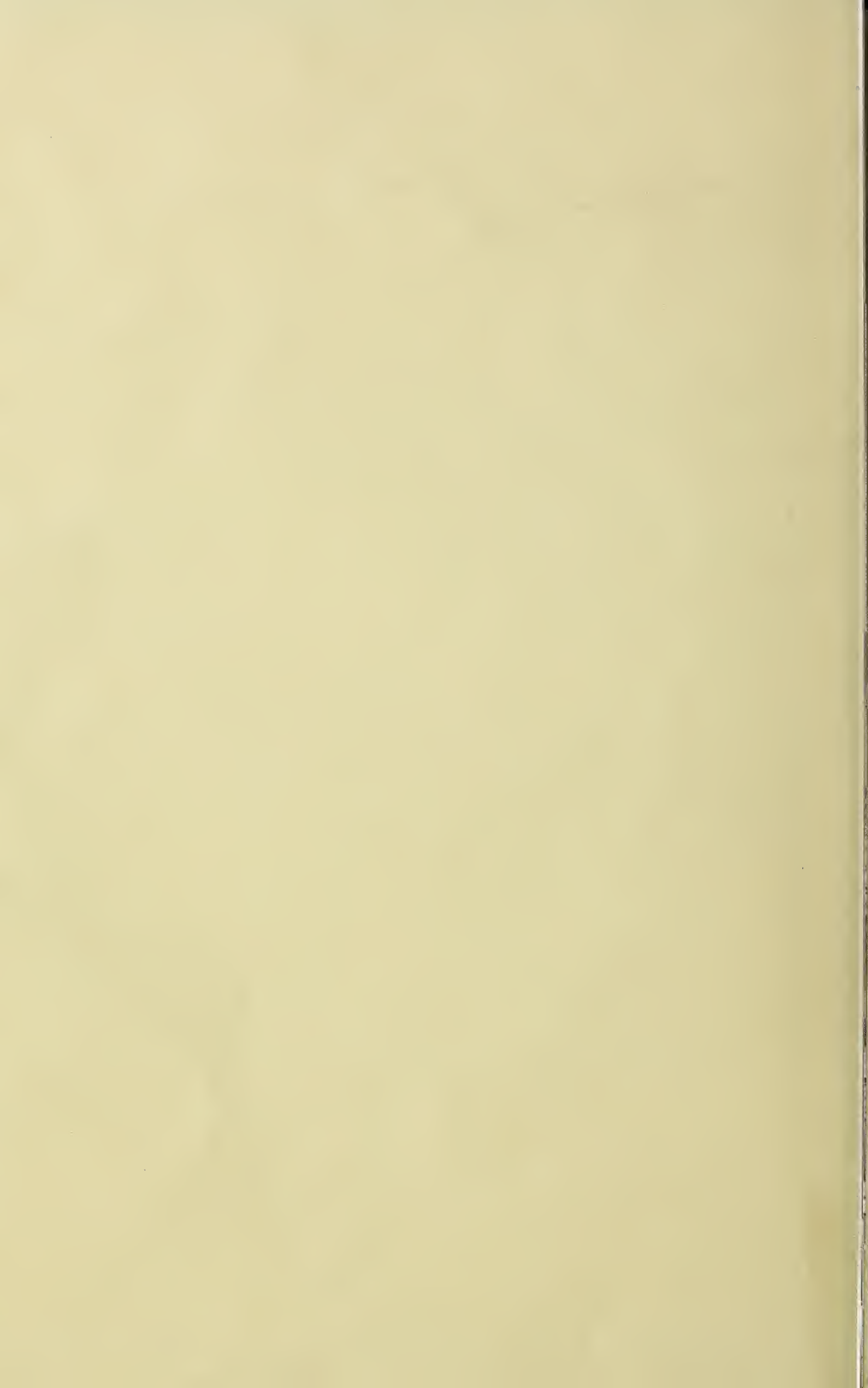


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THE AGRICULTURAL STUDENT



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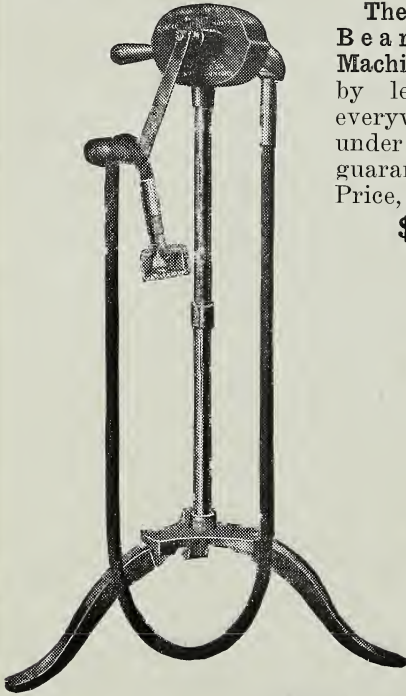
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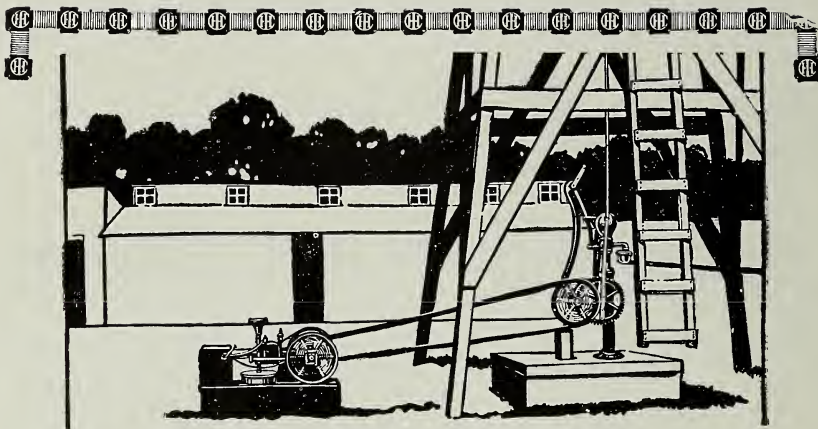
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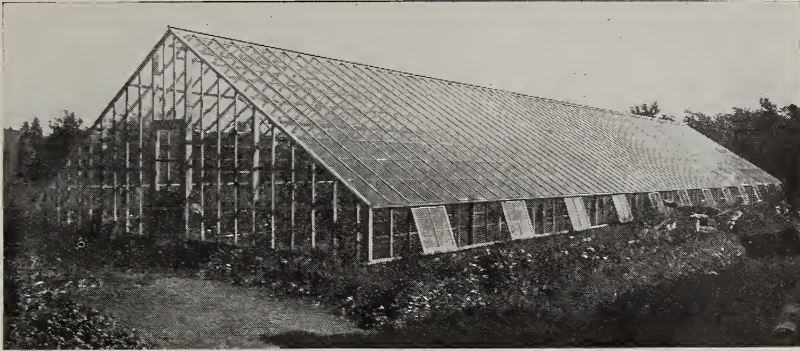
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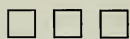
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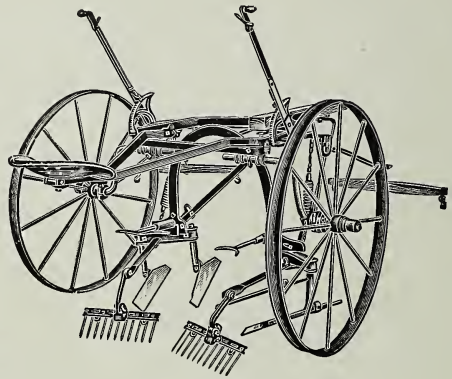
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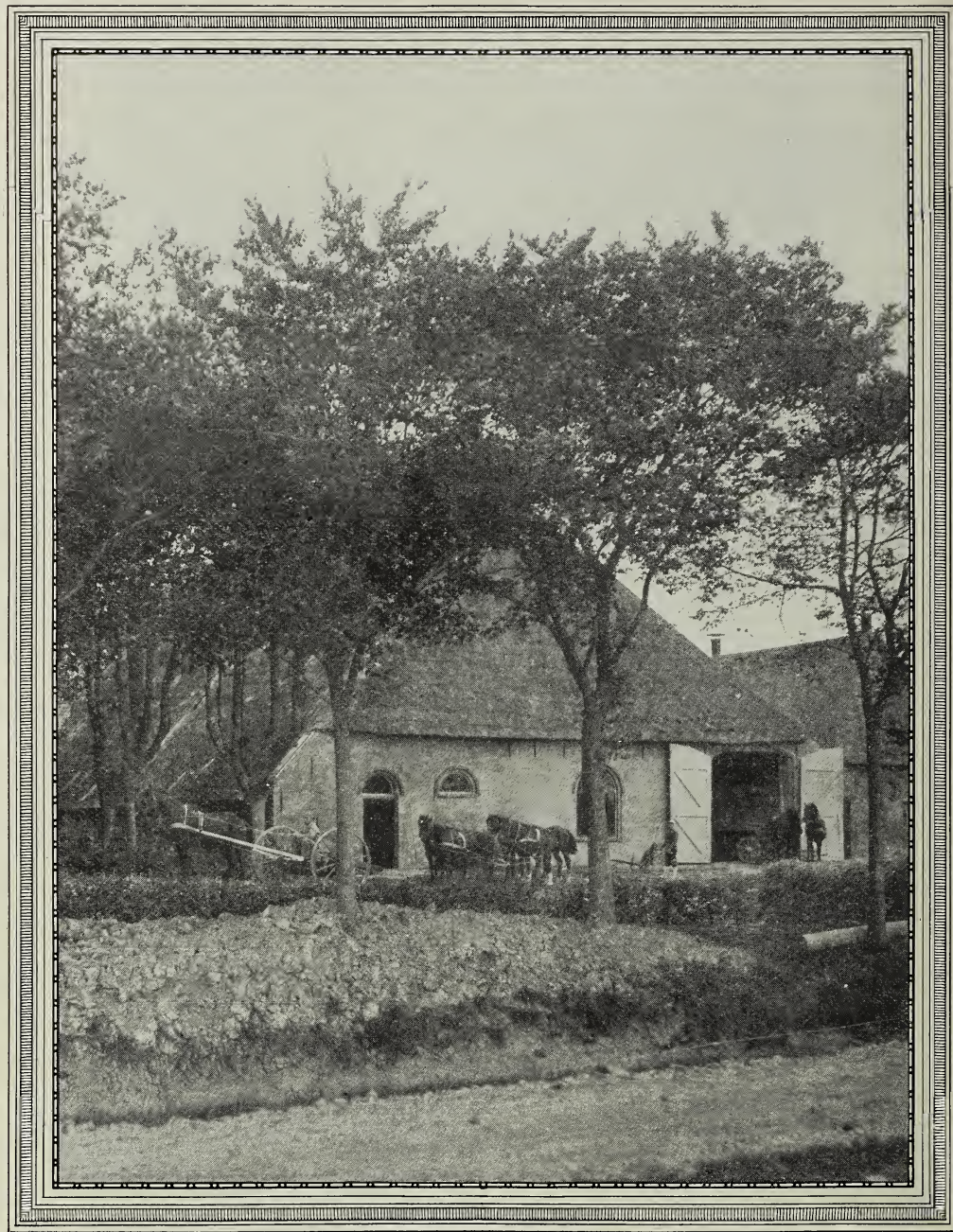
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—Courtesy Extension Department.

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A TYPICAL SCENE IN THE RURAL DISTRICTS
OF HOLLAND

THE AGRICULTURAL STUDENT

Vol. XX.

OHIO STATE UNIVERSITY, COLUMBUS, MAY, 1914

No. 9

The Responsibility of the College Graduate to His Home Community

DWIGHT W. WEIST, '05

Assistant General Secretary Y. M. C. A., Cleveland, Ohio

MOST YOUNG MEN when they enter college do so with a purpose in mind. Young men go to college generally. Not many are sent. It is well that this is so, because by this step alone he relates his ambitions with the choicest of the ambitions of young men and to what later is to become the testing issue of his life experience. Few young men when they graduate from college understand this. The graduate with years between him and college halls has gained it by experience and so rightly can speak it in tones of certainty.

There comes a time in the life of each college man, to some even before they enter college, to others in the freshman year and yet to others in their senior year, when they are to decide in what way they are going to relate themselves to human problems. In reality these are the only problems they are to meet. People are the important factors of life. Their happiness, comfort and joys are to be shared. People are social beings and life's problems are social problems. It may be said that being an engineer and bringing to man great convenience and mechanisms of helpfulness is a social mission. Likewise the raising of live-stock and the growing of corn are all social problems because they add to the accumulative happiness of man. Some may yet say that to study law and to become a law-

yer is a social mission. All these may be such if through them the student has received his ideal of social power and if they add to his increasing faculties and character accomplishments which are to better society. To many the distribution of the product of the farm or factory is a far greater problem than the production of such products.

Is there to be a direct asset of your life that the community in which you are to live can share of you as well as your commercial product, as good as that may be? Have you anything to give or are you starting out to get? You have now that which some call an education, but what sort of a creature has it made of you? Hundreds of young men, as they leave college, return to the life of their home communities again and to the new communities—and are lost to the great human causes there. Very often this is true because the young man in college puts about him an unnatural barrier which prejudices him against everything except as they are easily related to the life he has known. The transitions to these new conditions, after being enraped four years in the enclosure of college life with idealism and a certain delightfulness, is sudden, but very decidedly certain. How slow socially will seem the communities into which you go after leaving college! How far from your ideals of many things will

these communities be! How easy it will seem to you that you have nothing in common with such as they present!

The attitude taken in such instances will largely determine how effectively the college has fitted you to cope with the problems and experiences in practical life. For lack of vision and outlook, and because of environment these communities must be self-centered and narrow. The college man, on the other hand, may for instance have been related to the progressive religious forces in the college community. But when he returns to his home or goes to the new community he will find a different sort of church and religious leadership. He is likely to find a conservatism in theological views and practice. His first impulse may be to rush in and attempt an immediate reform, and in doing so, run the risk of a possible loss of prestige which his training by pursuing a different course would have given him. If he has anything to give the community it will soon be found out and, if it will add to the tried and sound experiences of generations of thought and action, he will find his rightful place early and the place will be one of influence and respect. This is not only true in the field of religion, but it is likewise true of politics, social reform and of business.

Very reluctantly we must say that the college alumni associations of our cities are failing to do a very needy and essential piece of work. It may be said that our first duty is to relate the incoming graduates to the things that he should know. An example of this sort of relationship is found in the information bureaus of the Young Men's Christian Associations as they relate incoming students to college interests and life. The graduate coming to the city should be enlisted at once, while he is

still in the fervor of the impulses which even this short transition has given him, into the civic, social, moral and religious betterment propaganda of the community. He should relate himself to the life of the young manhood of the city because here is where the city stands or falls. He should further relate himself to the boy-life, to the high-school life; and his valuable college experience should be a splendid asset as he seeks to enter into these helpful relationships. Scarcely does a day pass when calls do not come from social and religious workers for trained young men to do unselfish service in one way or another. The embarrassing reply is given so often that few young college men are ready and prepared to respond to such a call.

As the graduate leaves the college halls to take up the larger work in the world, he does it reluctantly, but he should turn his face from those halls knowing that his greatest usefulness is now before him. If he takes his place in the quietness of a country or town community, let him do so to become a student of that community. Let him study it that he may better it, that it may be a place more fit to live in—a place where all of its people may be made more happy. If he should choose a community where the unrest and hustle and bustle of the same seems to conceal the constructive forces at work, then let him beware! For amid this turmoil there is a great throbbing life. If he is not found at once by the forces of this life, let him hunt it out and volunteer his constructive services. As a citizen, no small obligation rests upon him to do his part. The fact that he is only one of thousands does not excuse him. Let him feel that he is responsible for all that the community produces in happiness, character and life.

The Kelps As a Source of Potash

ROBERT F. GRIGGS
Department of Botany

AS GENERALLY KNOWN, the fertilizer companies of the United States have had considerable difficulty in obtaining the potash necessary for their products on satisfactory terms. This fact, together with the rapidly increasing use of fertilizers and the general movement for the conservation of our natural resources, led Congress to direct the Bureau of Soils to make a comprehensive survey of the fertilizer resources of the country.

The position of this country in re-

which we might easily save if we thought it worth while. More than 500,000 tons of ammonium sulphate are annually driven off in the fumes from our coking ovens and a large amount of fish scrap which might be made into high grade fertilizer is thrown into the ocean from the salmon canneries along our Pacific coast. But if we had no source of supply whatever we could probably maintain the nitrogen supply in most of our land indefinitely by the use of leguminous crops.



A BED OF NEREOCYSTIS—TAKEN AT LOW TIDE.

Numerous Small Kelps in the Foreground.

spect to two of the great classes of fertilizers is all that could be desired. Our available supply of phosphates is superior to that of any other nation. The rock phosphate mines within our borders are sufficient to supply our needs for 1200 years if we use on the average three times as much as at present. While we have no such supply of mineral nitrates we need have no fear of a shortage. Indeed, it would be better if we were somewhat concerned about the matter, because we waste very large quantities of nitrogenous material

But we are in a very different position as regards our potash supply. For, together with all the rest of the world, we have been dependent on the mines of the Stassfurt district of Germany. The deposits of this region are very extensive, but the output and prices are controlled by a trust—the “Kali Syndikat”—which after the fashion of monopolies, has held up prices to suit its own ideas of profit and we have been compelled to pay or go without. Under these conditions it became highly desirable to find a domestic source of potash.

From analogy with the German deposits, the inquiry naturally turned toward a search for a mineral source and there has been a prolonged and thorough search of all apparently promising districts in the country. Without going into details, it may be said that although there are enormous quantities of potash-containing minerals, some of which, especially alunite, may become important in the future, nothing of present commercial promise has been discovered.

The Bureau of Soils therefore turned its attention to the only other source of potash—the kelps. The kelps of the Atlantic coast, especially in Europe, have been recognized as a source of potash from time immemorial and they have been gathered and used as fertilizers from early times. The relatively small potash content of the Atlantic kelps, their small size and their habit of growth make them unable to compete with the product from the mines. The giant kelps of the Pacific are not only very much larger than those of the Atlantic, but their habit of growth is such as to make harvesting easy and cheap and, most important of all, they are five or six times as rich in potash. The analyses of commercial species from Puget Sound and California average 23 to 31% potassium chloride (dry weight).

When the high potassium content of the Pacific kelps was understood a comprehensive survey of the whole coast was undertaken and a number of charts showing the location of the kelp beds have been published, but the work is not yet complete. It was in the continuation of this work of mapping and estimating the tonnage that the expedition of which the writer was a member was sent to Alaska in the summer of 1913.

The data available are not sufficient therefore for an accurate estimate of the potassium available from the kelp, but it is immense.

Cameron (62nd Congress, 2nd session, Senate document 190:1912), in his preliminary report, says: "The tonnage of kelp actually seen and mapped this past summer, if cut to a depth of eight feet, was certainly in excess of 8,000,000 tons, containing at least 400,000 tons of potassium chloride, corresponding to 5 per cent of the net weight or 30 per cent of dry, worth at present prices about \$16,000,000, or considerably more than the value of our present importations of all potassium salts. But excluding what may be found to exist in Alaska, it is very probable that less than one-fourth of the standing kelp was mapped and a vast majority of the important groves could be safely cut twice a season, so that it does not appear extravagant to say that the Pacific kelps at their best can yield over 6,000,000 tons of potassium chloride, with a value at present prices well over \$240,000,000. There would also be recoverable over 19,000 tons of iodine, worth at current prices over \$95,000,000. No such quantity of iodine is ever likely to be used. Importations appear to be irregular, but it would probably be conservative to say that even with much cheaper iodine only \$1,000,000 worth annually can be marketed in this country, the cost of production being only a small fraction of this sum. Finally, admitting that the foregoing estimates may be extreme, and taking all factors into consideration, it is certainly safe to say that the Pacific kelp groves can easily be made to yield nearly 1,000,000 tons of potassium chloride annually, worth at least \$35,000,000, and that the cost of production can largely, if not entirely, be covered by the value of the

iodine and other minor products. The value of the present annual importations of potash salts from Germany is in round numbers \$12,500,000."

It is not easy to convey to one unfamiliar with the seashore a clear idea of the nature of the kelps. They are members of the great group of brown algae which means that they reproduce

by microscopic free swimming spores and that in addition to their chlorophyll they have another pigment which gives them a deep chestnut brown color. They are exceedingly diverse in size and form, though all are modifications of a single fundamental type. All are anchored to the bottom by strong hold-fasts. Many, like the well-known La-



MACROCYSTIS PYRIFERA.

1. A Cluster of Fruiting Laminæ from the Base of the Plant.
2. A Growing Tip Showing Origin of Laminæ.

minarias or "Devil's apron," have a single large leaf-like lamina connected with the holdfast by a stem-like stipe. *Egregia* has a long stipe bearing innumerable small outgrowths which give it the appearance of a feather. *Postelsia* has the aspect of a miniature palm tree. Those which are commercially available are provided with floats that buoy them up on the surface of the water so that they can be harvested from a boat without the difficulty or labor of gathering from the shore on the rocky and dangerous coasts where they grow. So far as the west coast of the United States is concerned, commercial interest centers in two kelps, *Macrocystis* which is best developed along the California

coast, and *Nereocystis* which is most important northward. In *Macrocystis* (Figs. 1 and 2) long stipes come up from the holdfast and float along the surface buoyed up by the floats of the numerous laminae which are given off at short intervals while the fruiting bodies are borne on special laminae near the base of the stipe. In *Nereocystis* a slender rope-like stipe stretches up from the holdfast to a retort-shaped float (seen in the figure behind the canoe) from which a large number of laminae dangle near the surface. Individual plants of either of these kelps may reach very great sizes and often exceed a hundred pounds in weight.

Around the Year on a Farm in North Central India

WILLIAM BEMBOWER, '11
Allahabad, India

TWO OHIO STATE GRADUATES of the class of 1911 are now working at Allahabad in the United Provinces of India, and it is hoped that others will follow. The farm that we are to go "around the year on" is composed of 275 acres on the south side of the sacred Jumna River, not far from its junction with the Ganges. It is the property of the agricultural department of the Ewing Christian College, which is a mission institution of the American Presbyterian Board of Foreign Missions, the Arts and Science departments of which have between 275 and 300 students. On the same campus there is a mission school which has an attendance of over 700 boys. The students of the agricultural department number twenty this year, as compared with three last year, which was the first year of its existence.

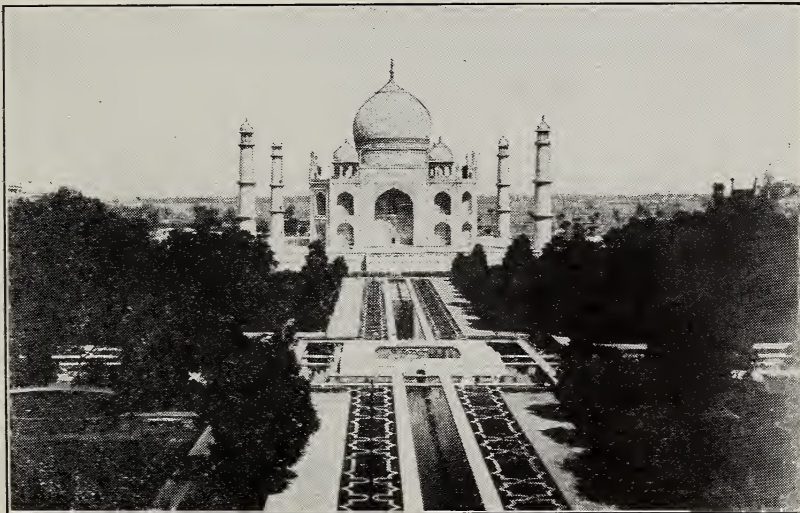
As to some of the climatic features of the farm in question, we may sum them up briefly in the following terms: Latitude, $25^{\circ} 26'$; longitude, E. $81^{\circ} 52'$; height above sea level, 300 feet; average annual rainfall, $39\frac{1}{2}$ inches, $34\frac{3}{4}$ of which falls between the months of June and September; the average temperature is between 70° and 80° , the maximum shade record being 119.8° and the minimum being 22° . With a sun temperature of more than a hundred and seventy degrees there is often a difference of more than ninety-five degrees between the day and night temperatures which, of course, has a decided influence on plant and animal life.

Since the beginning of the season is at the breaking of the rains in June, we will at once turn our attention to the farm in its barren condition, with al-

most a vertical sun, and the hot winds blowing over its fields to effectively scorch the remaining, struggling, thirsty plants. We are referring to the famous mango and its associates which dot the landscape near villages and plainly mark out the excellent government roads which are a striking contrast to the road the average Indian builds. The season of the mango extends from May through July and, although there are many varieties of this fruit, the best of which are found in the

The gathering clouds have been threatening for several days and it almost seems as if it could not rain. At last it breaks, however, and the dessicating atmosphere takes on a character which all enjoy. The rains sometimes begin in June, but more commonly come in July.

If the soil has been well plowed when the last crop was gathered, it will be in a good condition to receive the water; but if it has not, it will absorb very little and will cause it all to flow away



TAJ MEHAL—ONE OF THE FINEST BUILDINGS OF INDIA AND OF THE WORLD.

—Courtesy "The Ohio Farmer."

gardens of the wealthier class, and the poorest of which are greedily consumed by the poor, who, as one writer put it, "look forward to the mango season with anticipation and look back to a year of plenty with satisfaction." At this season, at least, they get more than one meal a day, for at times they may buy two hundred for a pice, a coin worth about half a cent. During the time that nature is so unkind the Indian ryot (cultivator) is spending much of his time sleeping and truly deserves the name of "a son of rest."

to the drainage channels to benefit no one. The usual condition is the latter, and hence considerable rain must fall before the soil is ready to stir with the common wooden plow of the Indian ryot.

The first crops sown are the minor millets, which will mature in about two months. The many kinds of plants which grace the fields a short time later are: kafir corn (juar) and other sorghums, sunn hemp (sunai), beans of various kinds as well as a vast number of other legumes, the pearl or giant

millet with the pigeon pea (arhar), maize, rice (where water is abundant), carrots and occasionally other root crops, cow-peas, cotton, and various fibre and food crops.

By August all the fields are green with the luxuriant vegetation that the steamy environmental conditions are able to produce except on the plots that have been reserved for the winter crops, or where there has been some delay on the part of the cultivator.

Since the fields have nearly all been sown broadcast, the main work to be done is the process of weeding with the little "kurpi," a chisel-like tool, and it is indeed a slow process. It does not conserve moisture and is not effective as a weed destroyer, for the ignorant laborers do not remove the roots, but only cut them off.

The number of crops that are planted in the same plot also is surprising and often one may count at least six different species and sometimes as many different families of plants growing broadcast in the same plot. This makes cultivation impossible and hence results in a very indifferent crop of all kinds. Each, of course, must be harvested by hand and ripening at different times results in considerable damage to the later crops.

These methods are being done away with on this farm, which is under the American management and the drill and harvesting machines are now handling the crops under different conditions.

During September and October many tasks need to be done. The rainy season crops are being harvested and threshed on the threshing floor by the treading ox. The showers are much less frequent than in the previous three months, during which time about thirty inches of rain has fallen. The land is

being prepared for the winter crops and, having been left in an unplowed state for the previous months, very little moisture has been absorbed. Tests made in one of these fields showed only a trace of moisture at a depth of a foot, while in a field on the mission farm, which had been plowed at the beginning of the rains and harrowed at frequent intervals, contained twelve per cent of moisture.

During October and November the winter crops are being planted. These are wheat, barley, oats, peas, the chick pea (gram de chuma), flax, mustard, potatoes and most of the European vegetables.

December and January are therefore in some ways like the months of May and June in Ohio. The grain fields are flourishing and the northern birds are passing through or lingering to give us their sweet melodious music or to amuse with their gay colors. The wandering pilgrims also come during the month of January to bathe at the sacred junction of the Ganges and Jumna rivers. Their colors also are most interesting and one cannot but regret that photography does not reveal more of them.

The fruit of this season is the guava, for which Allahabad is famous. It, too, is a fruit which one does not relish on first acquaintance, but the better varieties are very much liked by those who have lived in the tropics for any length of time. The pomegranate and the sugar apple have been on the market in the past months and, together with the apple sent in from the hill regions one can get a good supply of fruit during this season.

The chrysanthemums and poinsettias, which are at the height of their glory between Thanksgiving and Christmas, must not be forgotten. They thrive especially well in this region and the

lover of flowers has plenty to keep him interested. Roses and violets also do well during the winter months.

February and March again bring on the harvest season and the groups of laborers gathering the sheaves with the sickle are a most interesting sight.

Many of the fields have such a short crop that a reaper or grain binder is almost useless. Then, too, the fact that rain falls in very small quantities at this time makes the plants very dry and considerable loss would result from the use of a machine. The situation requires some study to adopt modern machinery to it successfully.

The long season crops sown in the rain are also being gathered by hand at this time; namely, castor beans and the pigeon peas (arhar).

During the month of April the harvesting is finished and the oxen are busy everywhere on the threshing floors. Calculations made show that at the rate of twenty-five cents per day for a man and a pair of oxen (a current rate for their labor when hired), it costs no less than twenty cents per bushel to thresh wheat by this process. The danger from fire while the grain is on the threshing floor, from a workman's pipe, is also quite great.

One more objection to threshing with bullock power is that the fields should be plowed while there is still sufficient moisture in them. The hot winds of the succeeding months make it almost impossible for the light ox teams to plow and the result is that by the time the bullocks are free nothing can be done and the fields remain in a most favorable condition for the loss of all their moisture and will not readily take in

the deluges of rain that come in the summer.

The mango and the mahua with its most interesting fleshy flower, which is relished by cattle and man alike, have blossomed and are now supporting the maturing fruit. Just why trees would send forth new leaves when the conditions seemed so adverse was a puzzle to the writer the first year, but on observing the depth to which the roots go the problem was solved.

The months of May and June remain for a brief period of rest and afford an opportunity for the farmer to prepare for the busy season to follow, which he seldom does, however. The hot winds cause great dust storms at times during these months and life must be most miserable under the low tile thatched or mud roof in the mud houses of the common people. The large high roofed houses and the curious pankah or fan pulled by a laborer who gets at the most two dollars a month for his work alone make it possible for the European or American to keep body and soul together during the heat of the day during these months. Some can get away to the Himalayas or some other hill station during the time when school is closed.

The problems of the scientific agriculturist are many. A land half as big as the United States now has less men working on its agricultural problems than the state of California has and, although much of its land lies idle, it supports a population of about three and one-half times as many as the United States does.

Will any of you "come over and help us?"

The California of Today

C. R. GEORGE, '12

THE COMPLETION of the Panama Canal and the opening of the Panama-Pacific Exposition will turn the eyes of the world upon our western states. Because of her location and the great public interest in her natural resources, as well as her pleasure resorts for both summer and winter, California will be the subject of much talk and the destination of much travel during the next few years.

Coming as these events do in the early part of a great era in the agricultural development of the state, they will be a great aid in furthering its progress. The great need of California is for more people. This can be appreciated when a total area of 155,650 square miles is compared with a population of 2,378,000—an average of one person for every 42 acres of land.

Many of the large holdings of earlier days, when the cowboy and the combined harvester ruled supreme, are still held under extensive cultivation or for stock ranges. In many instances their operation is not a financial success, but they are being held for the rapid increase in land values. At present, however, these large ranges are being broken up into small ranches of 15 to 100 acres. Irrigation systems are being introduced and land that was selling only a few years ago for \$40 to \$50 per acre is now selling for \$150 to \$300 (and some in the citrus belt of Southern California even as high as \$1000 to \$1500). These high values are possible only in certain limited sections where topography and climatic conditions are favorable. As a whole the land is not as cheap as most eastern people suspect and much of the land is capitalized beyond its earning capacity.

Agriculturally the state is divided into several distinct sections. Prominent among these are the Valleys, the Coast, the Citrus Belt, the Imperial Valley and the Mountain Range. These sections are different in their climate, soil, rainfall and crops, and give a great diversity to the agricultural practices of the state. This great variation is due to the ocean currents that carry the heat and moisture, and to the mountains which affect their distribution.

The Coast region is the only one having sufficient rainfall for normal crop production. Here the temperature is very even throughout the year, but the country is subject to some very heavy and disagreeable fogs.

The Valleys is a term used to designate the extensive and fertile valleys of the Sacramento and San Joaquin rivers. These valleys run north and south between the Coast Range and Sierra Nevada Mountains. They are level, range in width from 50 to 75 miles and have an average rainfall of only 18 inches. This makes irrigation imperative except for the grain and hay that is grown under dry farming systems. Under irrigation, alfalfa is the main crop grown and a yield of five to ten tons per acre is grown.

The Citrus Belt of Southern California, whence the famous "sun-kist" oranges come, is undoubtedly the best known section of the state. It has climatic conditions favorable to the production of citrus fruits. It is famous as a winter as well as a summer resort among eastern people who come here to spend their—money.

The Imperial Valley is a reclaimed desert in the southeastern corner of the

state. This desert, made editorially famous by Harold Bell Wright's "Winning of Barbara Worth," is now one of the most fertile sections of the state. It has no rain except an occasional shower every two or three years, but uses the water from the Colorado River for irrigation. Alfalfa is the main crop although dates and other semi-tropical fruits can be raised. The summers are very hot. Often the mercury goes as high as 120° in the shade—and as there

puncher, the range business was an important and profitable one. Many of the larger ranches are grazed today in a similar manner. However, economic conditions demand a change and intensive production is the keynote of present day requirements. This demands quality and breeding. Consequently pure bred animals are in great demand and prospects for the pure bred business are very good indeed.

Naturally dairying is becoming a



"WITH THE DAIRY COW GOES THE HOG."

—Courtesy Iowa Exp. Sta.

is no shade, living conditions are very undesirable.

The mountain ranges are variable in character and range in altitude from the low foot hills to the high snow capped Sierras. Some parts afford good grazing, while other parts are very poor and rugged. Some of the mountain valleys are being cultivated and are very productive.

But there is still another phase of California agriculture. This is the live stock industry. Dominated in the earlier days by the sheep herder and cow

very important industry under the more intensive systems and especially so because alfalfa is the most abundant feed. The cows are pastured on alfalfa or fed the green hay during the long growing season and alfalfa hay during the winter months. Barley and other grains are used as a supplement by some feeders, but many cows feed on alfalfa alone during the entire year.

"With the dairy cow goes the hog" is true in most places and so it is in California. Most of the dairy products are marketed as butterfat and the skim

milk is left for the pig. Alfalfa pasture and milk grow the pigs and finish many of them for market. Others are finished with grain, but in very few instances do they have the desirable finish so common in the corn belt.

The beef cattle business is not so strong at present, but better days are sure to come. The proximity of the mountain ranges to the supply of feed on the valley ranches affords ideal condition for economical baby beef production. At present most of the beef comes from the grass ranges in the mountains and range country of Nevada and Arizona. Many of them are hay fed in the Imperial, Sacramento, and San Joaquin valleys before entering the market.

Most of the horses in the state are of the lighter types, due to the strong infusion of western pony and thoroughbred blood. Good draft horses are scarce and much of the farm work is done with mules. There is need of much improvement in all the draft animals.

Thus it can be seen that the outlook for live stock production is very favorable, but the markets are a limiting factor. These are not well developed and lack the organization which is necessary for the keen competition that

sets the price in accordance with the supply and demand. Until such a change takes place the meat producers are working at a great disadvantage.

It is hard to write of California agriculture without at least mentioning the people. The rural population is equally as variable as the agricultural conditions of the state. Of most interest is that portion of the population which the state can well claim as its own. These older settlers, with their children and grand children, who so proudly defend their distinction of being "Native Sons" and "Native Daughters," predominate in certain sections of the state. Most of these ranchers, not farmers, are wealthy because of the increased value of the land on which they settled. Many of them are still holding it for further benefit of this unearned increment. Among these people one can see those habits, customs and manners which are typically Californian. The influence of the early pioneer, the gold digger and the cowboy, still lingers.

But outside influences are being strongly felt. Outside people are bringing new traditions and new customs with them and one cannot but regret the day when that which now lingers will be lost.

MAY MORNING.

Now the bright morning star, day's harbinger,
Comes dancing from the east, and leads with her
The flowery May, who from her green lap throws
The yellow cowslip and the primrose.
Hail, bounteous May! that doth inspire
Mirth and youth and warm desire;
Woods and groves are thy dressing,
Hill and dale doth boast thy blessing.
Thus we salute thee with our early song,
And welcome thee, and wish thee long.

—Milton.

The Evolution of the Merino

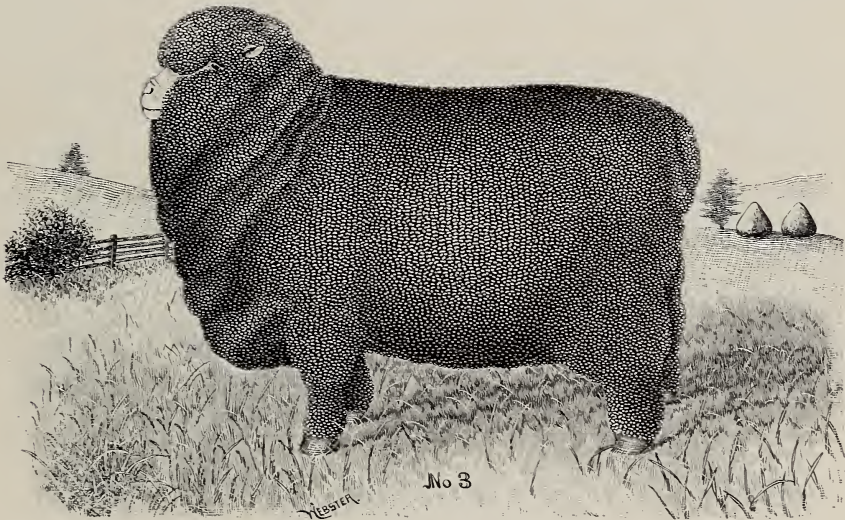
ARCHIE J. BISHOP, '15

THE American Merino is the oldest and most widely distributed breed of domestic live stock in the world. Perhaps no other breed has passed through as great a period of usefulness and received such general recognition as has this one.

The term "Merino" signifies from beyond the sea. The breed was first recognized as the Merino in Spain before the Christian Era. History states

stitution, and weight of fleece being sacrificed for fineness of fiber.

At a very early period Spain possessed several breeds. One was black while another bore a "red fleece." The latter was superior in fineness to all others and was considered of the Tarentine variety. These were the progenitors of the celebrated Merinos. Although these Tarentine sheep laid the foundation for the excellence of



AN EXCELLENT B TYPE MERINO.

that they originated along the coast of the Black Sea; from there they entered Syria; and from Syria were carried into Italy. They were introduced into Spain by the Romans, who later secured material for their finest fabrics from those woolly beauties which grazed upon the luxuriant pastures of Boetica, Spain. The Merino was early noted for its fineness of fiber, the quality which gave it distinction over other breeds and a wide reputation. Those sheep were small and delicate, size, con-

stitution, and weight of fleece being sacrificed for fineness of fiber. the Merino the resulting race betrays an amalgamation with the black sheep of Spain. This accounts for black spots which frequently crop out on specimens of the breed at the present time, thus showing a tendency to revert to the original type.

During the thirteenth century Spain became renowned for her woollen products. Fine fabrics were exported to all parts of Europe and Africa. The Spanish government realizing the superiority of its Merinos attempted to

protect the industry by preventing exportation. They maintained this monopoly until the overthrow of the Spanish dynasty by the French under Napoleon.

The first to carry the golden fleece from Spain was a Swede who in 1723 imported into his native land a small flock. Other European countries soon followed with extensive importations. The Saxony shepherds of Germany used great care in the selection and management of their flocks. They produced the Saxony-Merino, a strain remarkable for fineness of fiber.

Reports of the excellence of the Merino had already received attention in the United States. Two ewes and one ram were purchased by Wm. Foster and crossed the Atlantic in 1793. These were the first of the race to reach American soil. However, their value was not known and they met the butcher's block before doing anything for the breed. The first importation of Merinos which were bred and retained in the United States was a pair secured in 1801 by Seth Adams of Zanesville, Ohio. Colonel David Humphrey's noted importation of one hundred head graced the Connecticut pastures in 1802. From these and other importations resulted the establishment of numerous flocks which were to make a great impress upon the breed. Large sums were paid, as Colonel Humphrey is said to have sold two pairs for \$6,000.00.

Each generation marked a milestone nearer the desired goal. Earnestly these breeders studied their flocks, selected the individuals approaching the ideal, and discarded the inferior ones. Wrinkles, oil content, and density served as means of increasing the weight of fleece. Finally they produced a type with heavy folds over the body

and yielding a bulky fleece, which was black on the surface but creamy or golden beneath, where the fine crimped fibers were laden with flakes of oil. Size, quality, covering and form received due consideration.

American breeders selected for three types. Some desiring to lengthen the staple and increase the size, bred for the smooth type, free from wrinkles. These were termed type C, or the Delaine. Others preferred a B type, possessing a few folds but smooth body, with more density of fleece. Then the sturdy breeders of the very dense A type kept the same course and furnished rams to head the flocks of all three classes, in order to maintain the weight of fleece. At present the medium, or B type, meets with most favor among breeders in general, for they seem to combine form and fleece in the most practical proportion.

The value of the Merino lies primarily in his ability to improve the quality and weight of fleece. Continuous mating of strictly C type specimens invariably results in loss of quality and weight of fleece. These may be retained, on this plain type of sheep, by mating with type B, having a fleece of good quality and an abundance of free flowing, good oil. Type B, in turn, must possess on infusion of type A blood. Hence all three types are essential and none of them can be dispensed with.

Merino breeders and the foreign trade call for types A and B. The Delaine, noted as the greatest field sheep finds his place of usefulness in the production of the famous Delaine wool and in raising lambs for the market. Delaine and cross-bred Delaine lambs mature early, can be successfully kept in large bands, and command very satisfactory prices on the market.

The Ohio Agricultural Extension Department

TOM L. SMITH, '14

NINE YEARS AGO the people of Ohio knew nothing of agricultural extension, and further than that there were only a few counties in the state whose populace had the honor of knowing Prof. A. B. Graham. Great events often hinge on small incidents. If, somewhat less than a decade and a half ago, there had not arisen a giant in the teaching profession by the name of Graham, who first saw the possibilities of making the country schools of Cham-

ham to take charge of the Ohio Extension department, hoping as they did at that time to create a department that would reach the large farming class and transfer to them some of the excellent advantages of the college of agriculture and the work which was being carried out there.

The Extension department was not at first a very extensive organization. For several years Prof. Graham was the sole employee, clerk, editor and lec-



A PROMINENT FEATURE OF EXTENSION WORK.

—Courtesy Extension Department.

paign county better by the introduction of industrial arts and agriculture and who later revived the abandoned farmers' institute at Springfield by promoting agricultural exhibitions for girls and boys, it is possible that the Ohio State University and the Ohio Legislature would not have become impressed so early with the importance of extending agriculture into every nook and corner of this great state.

Success attracts success and the university understood this back in June, 1905, when they called Prof. A. B. Gra-

turer. When R. L. Shields was added to the force in 1907, he and Prof. Graham worked out the first news service, a service consisting of semi-monthly news letters on agricultural subjects sent out to the newspapers of Ohio and signed by certain professors of the college of agriculture, which awakened a wide interest in the college in all parts of the state, even with people who had never known of the existence of this college.

Where such work was attracting so much complimentary attention and ac-

complishing so much good among Ohio's farmers and Ohio's farming communities, it was bound to find a place in legislation. It was during the year 1909, however, that the Ohio legislature made a propitious move in appropriating funds for the furthering of agricultural extension among Ohio farmers, and the consequent growth in this field has resulted. From a staff of two, there has developed a large staff of men and women, each an expert in his or her especial field of agriculture, to the number of thirty-five at times and never less than twenty, who are employed in teaching and preaching agriculture to the farmers, their wives and their children.

The tremendous task of extending agricultural education to farming communities and to the farming class of people has fallen into the hands of the Extension Department and it would be a hard matter to say what **one phase** of the work has been instrumental for the most good.

The children's clubs were one of the first things to be organized. It has been true that for many years our teachers, even in the country districts, have been unwittingly educating the farm boys and girls away from the farm. By seeking to inspire rather than to disgust children with farming subjects, and to center the attention, not only of these children, but of the community as well, upon some definite and material agricultural subject for study, these agricultural clubs were organized by the Extension Department, and the good they have accomplished in Ohio is gratifying.

Then again, there has been the organization of farmers' clubs and institutes, schools where men and women and children have traveled miles, hungry to listen to authorities upon agri-

cultural subjects. Not alone for the messages of farming which these farmers' schools have conveyed, have they been of value, but also because of the larger horizon, because of the larger view on life which such meetings have carried with them.

Bulletins have played an important part in the development of this phase of agriculture, and there are published monthly over 35,000 copies, covering a wide variety of subjects, for free distribution. The news service has enjoyed a like development. Under the able direction of Geo. Crane, the Extension Editor, live topics on agriculture together with news of the agricultural college are being scattered broadcast about the state in the form of bi-weekly letters to Ohio newspapers, in the form of monthly information letters to grain dealers, millers, and bank cashiers, and in the form of plate matter for the American Press Association and the Western Newspaper Union.

The staff of the Ohio Agricultural Extension Department, from the chief down to the clerical force in the outer office, is assuredly one large family, bound together for a common good, and it is an inspiration to come into contact with any or all of them. The present staff is made up as follows: Professor A. B. Graham, Supt. A. E. Eswine, C. S. Wheeler, Ruth James, Assistants; Geo. Crane, Editor; M. A. Bachtell, Soils; W. J. Hendricks, Porter Elliot, Soils (part time); W. H. Palmer, Animal Husbandry; R. B. Cruickshank, Horticulture; L. P. Bailey, Dairy (part time); Laura Anderson, Helen Scott, Mary Betz, Treva Kauffman, Maude Okey, Mrs. Clara Smith Rogers and Mrs. Marian Lucas Garvin, Home Economics; Alice McMillan, Luella Searle, Elizabeth Hopkins and Lora James, Clerical Force.

Vacation Experience

D. N. LUTZ, '16

A KNOWLEDGE as to the practical results of the methods he has been studying should be of paramount interest to the aggressive agricultural student, in thinking and planning for his summer's work. Such knowledge may be obtained in two ways: by working them out personally, as do the men who "hire out" to some aggressive farmer, and those who go back home and work for their fathers; and through close and intimate observation in some prosperous farming community. This opportunity comes to those who follow the different lines of salesmanship during the summer months. This line of work makes it possible for him to study that community as to its ideals, deficiencies and soil conditions. While visiting the different farmers, the student can follow up some special lines of investigation. By using a note book, data may be noted as to the building, lighting, economical arrangement of stables, granaries, entrances and exits, etc., of large barns. Such subjects as dairying, stock feeding and raising, truck growing and horticulture might be developed in the same manner. Many of the men with whom one talks throughout the prosperous farming localities are former college students and thus the methods they use are just the ones we—in many cases—study today. Thus one finds the very information he is seeking, coming not only from one man, but from

many, and by using system in the gathering of such information, conservative conclusions may be deducted.

There is another special benefit to be gained in this line of work. Farmers, in general, do not have as much confidence in the suggestions of college advisors as they ought to have. This is not because these suggestions are unworthy, but that the college man has not learned how to suggest help and new ideas, without antagonizing. It is his manner of approach that is faulty. In failing to influence, he becomes discouraged, more or less cynical, never becomes the leader he ought to be, and thus loses his greatest opportunity for service. There is an added responsibility resting upon the college man because of his training. His neighbors expect him to be a leader, but this does not mean that he will become such, unless he is acquainted with human nature and goes about his task in the proper way. The experiences to be gained through the study and practice of salesmanship prepares a man for this larger opportunity of leadership, by teaching him how to approach and influence men to his way of thinking; how to meet and overcome opposition in a tactful way; and how to adapt himself to all manners of men and in all kinds of conditions. These ideas, in their application, are often overlooked.

"I feel a newer life in every gale;
The winds that fan the flowers,
And with their welcome breathings fill the sail,
Tell of serener hours,—
Of hours that glide unfelt away
Beneath the sky of May."

—Milton.

Farm Machinery at the University

"FIFTY THOUSAND DOLLARS' worth of machinery would be sent here within two months if there was a place to store it," said Prof. H. C. Ramsower in speaking of the machinery now loaned by the various companies for use in laboratory classes in Farm Machinery at the university. "There should be six makes of all the machines in order that the student could make the most complete, comparative study," he continued.

This department was instituted in 1909 when the first classes were held in the old English building. The next two years saw these classes in the old Veterinary Laboratory, which was on Neil Avenue, where the new botany building is now being constructed. In 1913 a new building was erected at a cost of \$19,000 at the rear of the Horse Barn, where the laboratory classes now study the types and construction in farm machinery.

Large harvesting and seeding companies are willing to loan the machines to the department, but reserve the right to take them at any time. When the old machinery building was torn down all the machines were sent back to the factories. Of course, the small companies cannot spare a manure spreader or binder from their factories, but the large concerns are always willing to send any tool they may have to the university. Steam and auto tractors could be easily secured if there was room for their storage here.

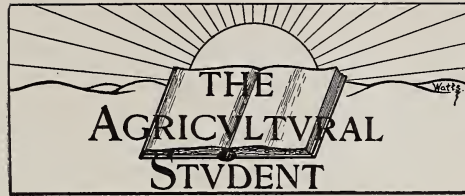
Machines are sent to the university and taken to the second floor of the large machinery building, in which are also kept the machines, wagons, and tools used on the farm. The machine is set up by an agent from the company, if asked to do so, but more commonly

the work is done by a student and then inspected by an agent representing the company which sent the machine. Only last month a grain binder was set up by two representatives of a large harvesting company, who also explained to the class the operation of the machine. The difficulty in such cases, however, is to get the agent to talk about all binders and not solely about the one from the company which he represents.

Farmers from the vicinity who are contemplating the purchase of machinery often come to the university to make an unprejudiced study of the machines in which they are interested. Recently one farmer made the purchase of a certain manure spreader from the study of the different makes in the farm machinery building. This plan is also an advertisement to the companies which furnish the machines such as plows, drills, mowers, binders, engines, etc.

One company last month sent a new type of cultivator for demonstration on the university farm. This cultivator is similar to the ordinary spring tooth cultivator on wheels, and has an advantage in regulating and maintaining a certain and uniform depth of cultivation. The machine is said to give good results and met with favor among those who tried it here.

All machines from the hoe to the binder or hay loader will be found on the university farm. Some old machines of former days can also be seen at the farm machinery building. A Ketcham mower, used about 1847, with one large wheel and a rigid cutter bar, is to be seen in the basement. A visit to the building will show many interesting features and the magnitude of the work in this department.



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COLUMBUS, OHIO, MAY, 1914.

Editorial

Sweet May with her melody of song and her exquisite beauty has come to us at last. Most beautiful **MAY.** month of the year—theme of the poet for ages past and kind mother of all plant life of the year. Month of planting for the bounteous harvest, we greet thee. In your short stay with us all Nature suddenly clothes herself in her most beautiful garment, trees burst forth into foliage by the sweet breath of the spring air, and the flowers in the woodlands come to tell their story of the great breadth of Nature and the loving kindness of their Creator. Blue skies above, matchless beauty of plant life below, and between a world of melody for even the slow coming bobolink has returned in his gaudy colors to sing his lusty greeting over the pastures and meadows. Little should we wonder why the poet was enthused as he imbibed the fragrance of this month.

Had you thought of this sentiment

as you went to your studies? Had you, Mr. Farmer, caught the sweetness of the season as you saw the long, dark furrow turned by the plow and as you watched the stock take their fill of the fresh, juicy grass? If you did not hear the call of Nature, turn aside now and drink the cup of her balm for cares. Rejoice with Nature herself when
 "Spring unlocks the flowers
 To paint the laughing soil."

Some one has said that his studies included only about fifty per cent of his college education.

COLLEGE Had you thought that
ACTIVITIES. your books and hourly grinds brought to you only half a training that you might secure in the same time? If this be true, are the students in college dividing their time as this man probably did? One finds in many cases the so-called "grind" who thinks only of his notes and text books, as he bores away in

his small room, shunning all literary activity and awaiting Monday morning to start the week anew. His chief mark of excellence is that he can always be found by the student who is the butterfly of college life and needs to borrow some notes.

Some students are, of course, defraying all or most of their college expenses in school and towards these this editorial is not directed. Others may release their energy through social activities, athletics, or religious work, but the ones that need the touch of inspiration are those who attend classes, go home to study, go to class, study and so on week after week with no more recreation than walking to their meals. They are the students who could not be persuaded to join any literary organizations but merely float along on the stream of college life as a chip of driftwood on a wave. It is to these that a voice is raised.

If we can obtain half or even one-fourth of our college training from sources other than books on steers and corn, how cheaply is that knowledge obtained! It is easy to calculate. How much will be your outlay for belonging to a literary society and two or three other organizations if the dues are a dollar a year? Then how does this compare with the amount of money that you are parted from each year? You must agree that this training is the cheapest investment that can be made in any education. It would not be with great risk that one could wager there are students who could not "put a motion" in a society not to speak of conducting the entire meeting.

In the June issue of *The Student* will be the opinions of former students of our own institution. Their views should be varied, yet we can take each of them as an expression of many others which

are never put in print. Watch for the ideas of those who have "played the game" as you are doing now. Some of them even show their loyalty to the college by returning for the annual Ag banquet. Is that when you are going to attend for the first time? The Student has always upheld literary life in all its diversity of form, and those who have guided it are not the losing men in life today.

Electricity is pressing the automobile and gasoline engine for recognition on the farm. Today **ELECTRICITY ON THE FARM.** the farmer talks as familiarly of magnetoes, spark plugs, and batteries as he does of corn, beans, and pumpkins. And now he is looking with longing eye to the electric light, the vacuum cleaner for the house and the stock, and other electrical appliances that may be adapted to the farm operations.

An electric lighting system can be installed at a nominal cost on many farms. Where there is already a gasoline engine, it may be used to run the dynamo and quite a saving may thus be effected. As farmers are seeing the light leading them to a higher plane of social and domestic conditions, they are also installing the lighting system whereby they may see even greater things.

Hard hand, coarse clothes, rough exterior, and a lack of appreciation of the finer things of life characterize the farmer of yesterday. Today **GENTILITY AND FERTILITY.** sees a change. With the automobile and auto truck, the modern lighting system and the labor saving machinery of all kinds in the house and on the farm, does the

farmer not have time for the finer things of life? Can he not turn aside from his daily path or routine, to pluck a flower of happiness?

But he is taking advantage of the flavor and the color of his own surroundings. Pianos are in the homes; the children are studying music or attending high school or college; the farmer and his wife are taking vacations and enjoy the pleasures of the highest form of society. Farmers' Clubs are organized for various purposes everywhere. The rural folks meet and discuss literature, sociology and problems other than every day affairs of the farm. Where are there people who should enjoy the finer things of life more than the rural folks? They are not contaminated by the baser elements of the city. Their faculty for enjoyment has not been surfeited with low class amusement. All they need is to develop the latent instincts of enjoyment and culture.

Those who have had an opportunity to study and understand some of the wider problems of life owe it to the less fortunate to be leaders wherever they go. Not the arrogant, "holier than thou" person is sought, but a leader

who is able to lead though he seems to follow. Such men, nay women also, are needed in every community. The rural people want to better their homes and social conditions, but the simple cry is often heard "We don't know how." "The fields are ripe unto the harvest" but the really great and conscientious harvester and leaders are few. Men of vision are needed who can see all sides of the rural problems and help in combining and developing **gentility** of the mind and soul with the **fertility** of the field, garden, and orchard.

With the June issue The Student completes the twentieth year of its existence. The manage-

THE JUNE ment plans to make it
ISSUE. a special **Anniversary**
Number. All old grads

and especially former members of the editorial and business staff, send in words of greeting to your former associates, reminiscences or a note of your interests at present, what your college course has meant to you, the essentials of a college career, lessons from life, or anything else that you may have on your mind. Do not wait for a personal request, but send in a note at once.

Do it now!

"Show me a community where men are particularly emphatic about their own rights and their neighbors' obligations and you will find discord rules there; but show me a community where a man has a regard for his own obligations and his neighbors' rights, and I will show you a community where prosperity abounds."

"He is not a good citizen who does not first discipline himself; loyalty like patriotism must begin at home."

"The strength of the pack is the wolf and the strength of the wolf is the pack. So the strength of man is society, and the strength of society is man."

—Prof. Carver at the Ag Banquet.

WITH THE BREEDER

NOTES OF INTEREST AMONG THE FLOCKS AND HERDS

Ohio and the Holstein-Friesian breed have lost the honors of having the champion dairy queen of the world. Last month the Guernsey cow, May Rilma, owned by the Chesterbrook Farm in Chester county, Pennsylvania, completed a year's record of 1,059.59 lbs. of butter fat from 19,639.5 lbs. of milk. This is an equivalent of over 1200 lbs of butter in the year and exceeds the record of Banostine Belle De Kol, the Holstein cow owned by Dimmick Bros. of East Claridon, Ohio, by one pound. It is reported that the cow was giving more butter the thirteenth month of lactation than she was the first month.

The records made the past year show the great progress being made in the dairy industry and the growing faith in the Advanced Registry testing. The Jersey breeders have come into the lime light more in the past year than ever before. Eminent's Bess started the race for the championship and was soon followed by Sophie 19th of Hood Farm with 999 lbs. of butter fat. Just recently Sperffield Owl's Eva completed a yearly record of 993 lbs. of fat which places her as the second "pace maker" of the breed.

Rapid progress is being made in the plans for the Panama-Pacific Exposition, according to D. O. Lively, Chief of the Department of Live Stock, and a preliminary classification and prize list is now ready for distribution. Tur-

key makes assurance that it will exhibit a stable of Arabian horses, some jacks, Angora goats, and sheep. Arabian horses and sheep will also be shown by Persia. In the South American exhibit will be a herd of llamas from Bolivia. Cattle and sheep exhibits are promised from New Zealand. Widespread interest in polo has caused the Exposition to give recognition of that sport, and an invitation will be given to the European polo teams to participate in a meeting at San Francisco in March, 1915. \$25,000 has been appropriated by Ohio for a live stock exhibit at the Exposition.

Over \$14,000 worth of live stock was sold by the farmers of Portage county at the spring sale of the County Improvement Association, held at Ravenna April 18. The horses and hogs sold at a low to medium figure but the registered Holsteins brought a good price, the highest being \$400. These semi-annual sales are but one feature of the work of the County Improvement Association in advancing agriculture in the county and the 500 farmers in attendance at this sale show that the plan is meeting with great success.

Entries should now be made for the Eastern Percheron Futurity contest. A purse of \$600 has already been guaranteed and it is thought that this will be raised to \$750, making the first prizes for the mare and stallion classes

over \$100 in this contest. Entries should be addressed to the Secretary of the Association, Prof. D. J. Kays, Columbus. A fee of two dollars is charged with the application and three dollars must be paid by July 1st when the name and number of the animal is given.

A purse of \$1500 offered by Gov. Cox will be given at the State Fair this year for a three-year-old trot; and a purse of \$1000 offered by C. K. G. Billings for the two-year-old trot. These two events are for Ohio horses only.

Allen, Van Wert and part of Putnam county will be selected as the Ohio district where the federal aid will be spent in the fight to stamp out hog cholera. Twenty thousand dollars has been the appropriation for Ohio from this aid, and the serum will be furnished by the state at a cost of \$5,000 to \$10,000.

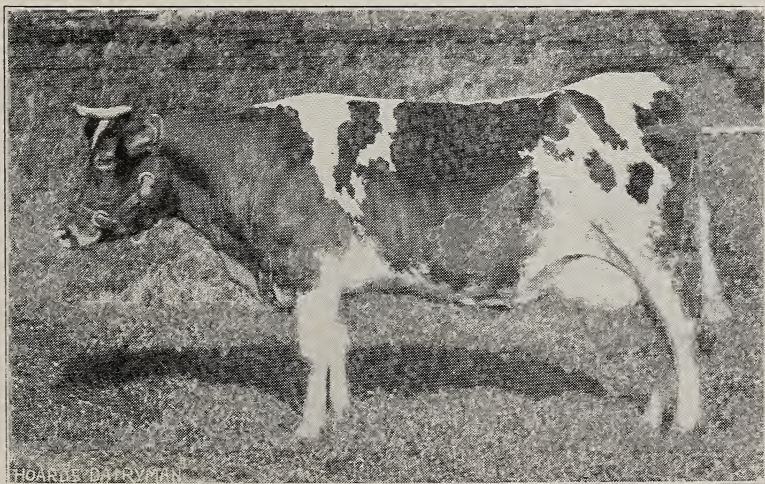
A million dollars for the study of animal diseases and especially bovine tuberculosis, has been added to the

Rockefeller Institute for Medical Research by John D. Rockefeller. This new department will probably be located near the New Jersey Experiment Station. James J. Hill pledged \$50,000 for the study of hog cholera.

Important changes as suggested by the Committee on Fees and Revenues were discussed at the annual meeting of the American Jersey Cattle Club, held in New York, May 6th. Among those receiving the most consideration was the plan of charging a double fee for registering bull calves not from Register of Merit dams.

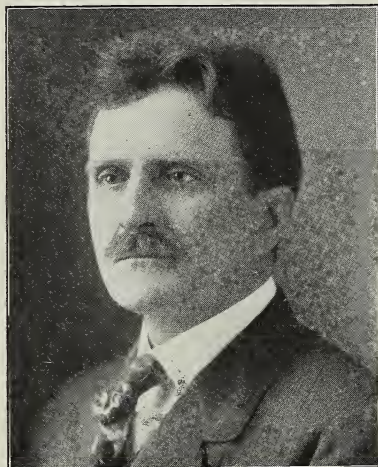
President Thompson and L. H. Bailey were the banquet guests of the club the previous evening.

A record of 23.8 lbs. of butter fat in 7 days and 93.3 lbs. in 30 days places the Holstein cow, Queen Piebe Mercedes, at the head of the senior two year old class according to M. H. Gardner, Supt. of the Advanced Registry. She was bred and is now owned by E. C. Schroeder of Moorhead, Minn.



MAY RILMA—NEW CHAMPION GUERNSEY COW.

ALUMNI WHAT THE BUSY GRADS ARE DOING



Frank W. Rane was born at Whitmore Lake, Mich.; graduated from Ann Arbor High School, '86; graduated from Ohio State University with the degree of B. S. Ag., '91; received M. S. Ag. from Cornell in '92. While at Ohio State he took an active part in athletics playing on baseball and football teams throughout his college course and winning the all-round athletic medal. While at Cornell in 1892 he lowered the hundred yard dash record holding the same for nine years. He was selected as Professor of Agriculture and Horticulture at the West Virginia University in 1892 and organized the Horticultural Society in that state in 1894. In 1895 he went to New Hampshire as Professor of Horticulture at the State College and Experiment Station, and, in 1900 was made Professor of Forestry. He has been State Forester and Lecturer at Massachusetts Agricultural College since 1906. Professor Rane has al-

so served in the capacity of lecturer for the state board of agriculture of Maine, Rhode Island, New Hampshire, and Massachusetts, besides being lecturer for a number of other scientific organizations. In 1909 by a vote of the Massachusetts legislature, the work of the Gypsy and Brown Tail Moth Commission was placed under his direction giving him the duty of directing the work that called for a total expenditure of a million dollars a year. Some idea of the importance of this work can be had when it is known that as many as 2700 men have been employed in the work, and that 700 tons of arsenate of lead were used for spraying these insects during one season.

E. L. Shaw, '02, immediately after graduation was appointed Assistant in Agriculture at the Missouri Agricultural Experiment Station, Columbia, Mo. After holding this position for one year he resigned to become Assistant Professor of Animal Husbandry at the New Hampshire College and Experiment Station. After teaching for four years at that institution he resigned to accept the position of Sheep and Goat Expert for the Bureau of Animal Industry, U. S. Department of Agriculture. During the year of 1911, Professor Shaw was granted a leave of absence to take charge of Field Investigations of the Sheep and Goat Industries for the U. S. Tariff Commission. In July he was offered a promotion and gave up the Investigation Work to take charge of the Government Experiment Farm at Beltsville, Maryland,

which position he holds at the present time. He is a joint author of a number of publications on sheep management.

E. O. Fippin was graduated from Ohio State in 1900. After graduation he became Assistant in the Bureau of Plant Industry and held a position in the Department of Agriculture until 1906 when he was detailed to Cornell University as Assistant Professor of Soils. Since 1909 he has been Professor of Soil Technology at that institution. Among his publications are: "Drainage in New York," "Field Operation," and "Soils," (joint author with T. L. Lyon) a text book which is used in a number of colleges and universities.

G. G. Hayes, '12, former business manager of The Agricultural Student has entered editorial work and will edit and publish The American Farmer, a new paper, at Chicago.

Ernest Oliver, '13, actively engaged in the production of fancy dairy butter on Indian Creek Farm at Versailles, Ohio, reports the birth of a 11 pound son, Robert Bryon, on April 8th.

S. C. Collison, '08, is chief chemist at the Florida Experiment Station, Gainesville, Fla.

R. C. Collison, '08, is chief chemist at the New York State Experiment Station, Geneva, N. Y.

Maurice French, two-year course, '13, has recently been selected as manager of The Georgedale Farm at Poland, Ohio. He will give attention to

the breeding of pure-bred Jersey cattle and Berkshire swine.

W. E. Dobbs, '10, is managing the Hallefarm near Painesville. He is developing a dairy herd in addition to general farming.

Howard Call, '11, who is farming near Kent, Ohio, was recently struck by a locomotive. Fortunately, however, only one arm was fractured.

G. R. David, a special "ag" during 1912-13, is manager of a 1100 acre dairy and general farm 20 miles west of Pittsburgh.

B. M. Hendrix, '09, formerly a chemist in the U. S. Department of Agriculture, is taking special work at Yale University.

W. J. Hendrix, '10, is farming near Bucyrus, Ohio. He is also connected with the Extension Department at Columbus.

J. A. Taylor, '12, is managing a farm of 335 acres near Peoli, Ohio.

W. F. Bruce, '11, who has been teaching in Minnesota, will engage in general farming at Delta, Ohio.

C. R. George, '12, was a recent visitor on the university campus. He has left the University of California to take up dairy cattle extension work at Purdue University.

V. A. Place, '12, and **Miss Helen Scott**, '12, were married April 18, 1913. They will reside at Marysville, Ohio, where Mr. Place is engaged in farming.

ALUMNI!

Now is your chance to let your old class mates know what you are doing. Send us your news of former or present days for the June issue.

Do it now!

CURRENT AGRICULTURAL LITERATURE

COMMENTS AND CRITICISMS ON
CONTEMPORARY CONTRIBUTIONS

Many people, and farmers especially, believe that the profitable use of electricity is denied them. It is certain that there are regions where electricity might be had at a comparatively low cost. **Electricity for the Farm and Home** by **Frank Koester**, is a book in which an attempt has been made to present in popular form, methods by which this form of energy may be secured. Many illustrations and tables are given to supplement the text. Among these are the many appliances for the farm and house. 214 pages, illustrated. Cloth, net, \$1.00. The Sturgis & Walton Co., New York.

New Ideals in Rural Schools, by **G. H. Betts, Ph. D.** In this little volume, the aim has been to present to the patrons of rural schools, the importance and improvement of these institutions. The subject has been treated under four main divisions; viz., the rural school and its problem; the social organization of the rural school; the curriculum of the rural school; and, the teaching of the rural school. The presentation of the work is logical and clear, and those connected with rural schools will find much advice in it. 128 pages. Cloth, 60c. The Houghton, Mifflin Co., New York.

Care of the Mare and Foal at Foaling Time is the title of an article by **Prof. Wm. Hislop** in **The Ohio Farmer** of April 4. It describes the proper

care and feed for the mare in foal and after foaling. The best time for foaling is through May and June when the sunshine and grass are plentiful, the pasture being the ideal place. Emphasis is placed on the importance of keeping the mare and foal in good health. Other "Ohio State" men contributing to this number are V. C. Smith, J. R. Wiley on "Rearing of the Dairy Calf" and Wendell Paddock on "Pruning Young Apple Trees."

A number of ways in which the spring crop of crimson clover may be turned to the farmer's advantage are pointed out in a new publication of the U. S. Dept. of Agr., Farmers' Bulletin 579, entitled "Crimson Clover." This crop is of particular value in the south, but the severe northern winters and the drouth in the regions west of the Mississippi make it unsuccessful.

An editorial in the issue of March 28 of **The Ohio Farmer** discusses the value of the cattle feeding experiments just completed by the Penn. State College of Agriculture. Practical feeding methods in this experiment prove the utility of silage and concentrates. Such demonstrations as this one in Penn. those in Indiana for several years past impress upon feeders facts not altogether new, but ones they have been slow to accept and put into practice.

Secondary Agriculture

Devoted to the Interests of Agricultural Education in High and Common Schools

In choosing trees for the home or school grounds avoid those having offensive odors or trees that produce water sprouts from the base, or are thorny. The wild trees in the same locality usually make the most vigorous growth.

In planting a tree dig hole wider and deeper than the root system so that the roots will not in any way be compressed out of shape. Any broken or bruised roots should be cut off to avoid the danger of decay or disease. Enough of the top should be cut away to make it balance with the roots which have been left in the ground when digging. Never leave any stumps when pruning the branches as these seldom heal over and they quite often decay far down into the trunk of the tree. Avoid placing any kind of fertilizer around the roots. A rich loam soil can be improved by mixing it with sandy soil. If the soil is of proper quality the top soil should be put in the bottom of the hole and with all types of soil the dirt should be firmly pressed around the roots.

"In almost every rural district there is need for improvement in the grounds about the school house. The day has, moreover, its social and moral benefits, which are not to be rated lightly. It affords an opportunity for neighborhood visiting and consultation. It brings together the teacher, the parents, and the pupils and prevents estrangements between them. It gives to all a new in-

terest in the school and its work. It affords an opportunity to present to the parties most interested the school needs of the hour.

Unless material good can be accomplished, the interruption of the studies of the school for an Arbor day celebration will prove unprofitable. The judicious teacher, however, will be certain to make the most of the opportunity which the day presents for securing needful co-operation. Then it is that unsightly piles of lumber, coal, firewood, logs or other material can be removed from the yards; sheds for fuel can be built or repaired; wells can be cleaned, walks laid, and fences mended. Beautiful flower beds can be constructed. Ungainly or noxious trees and vines can be cut away, admitting the wholesome sunlight."

—King.

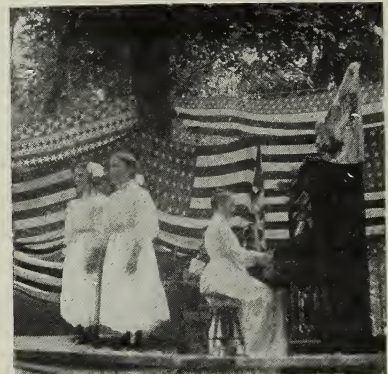
Much water in the soil drives out the air which is essential to plant growth. Then too this water tends to make the soil cold. If the soil is not in a loose condition it excludes both air and water. It is best to have the soil well aerated and drained. An experiment illustrating this point can be made by means of two boxes. Plant corn in each box under the same conditions as to soil and temperature. Use a moderate amount of water in the one with drainage. In the other use an excess of water with no drainage. Note the difference.

THE LAST DAY OF SCHOOL.

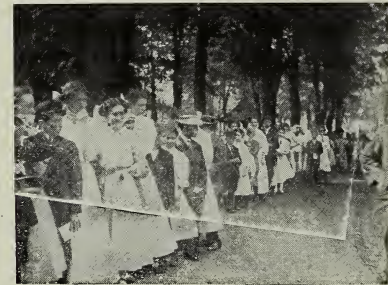
At this time of the year it often happens that the leading women of the community are buzzing around talking about the last day of school. Perhaps they are planning to surprise the teacher by bringing in their baskets and having a big dinner for everybody. This is the custom in many school districts and the teachers are always surprised

communities the younger generations are beginning some such practice for the last day of school.

It is quite fitting on this day that the teacher should have some variation from regular school work—a program of some kind. And why should there be a change from the regular school work? Pupils come to school realizing that the day will bring a change for



Taking Part in Making a Successful Closing Exercise of the School.



Informal and Formal Features of Closing Day Exercises.

—Courtesy Extension Department.

although they have known it for weeks. An event of this kind rarely takes place in city schools. It is generally limited to rural schools and especially those of one room.

In other districts it would seem entirely out of place to look forward to such a thing. In the whole history of the school such a thing has never been thought of and if it were no one would be willing to plan it. In many such

them. Many things occupy their minds other than lessons. Of course this varies with teachers and communities. On that day it is sometimes necessary for the pupils to do special work which may be in preparation for some examination, commencement or some other thing. But the whole day should not be taken up in this manner. Let there be some change that will bring about a gathering of the people of the commu-

nity. Such an assembly always covers up a multitude of seemingly little sins that have occurred during the school year. It shows that the community is back of the teacher in his efforts. They are all working to one end and where the atmosphere of study is both at home and at school the pupils learn more and are healthier and happier.

Suppose a dinner is planned and it is unfavorable weather. It may be held in the school house and followed by a program and speeches from people of the community. Such a dinner brings out the men when nothing else will, for when the wife and children are at school at noon it is very easy for the husband to go there for a little while for his dinner. And after all it is simply recognizing before the pupils that the school is a desirable thing for the children and not a thing to be shunned.

If the weather is favorable let everyone take the dinner basket and go to a woods near by. The older boys can put up swings. The girls enjoy taking walks, gathering flowers or preparing the dinner. To get the greatest benefit out of such a feast every one should eat together in picnic fashion. This may be followed by stories and speeches. The afternoon may be spent in athletic contests in which everyone, old and young, may take part.

If the day is well spent it leaves a feeling of satisfaction in the minds of every one. It lifts the burden of school life from the children and they think that the teacher and school are all right after all. It is really the first seed of the beginning of a successful school the following season.

The State Department of Education for the past three years has been conducting a campaign for better rural

schools, and better country life. This department secured photographs of old school houses in all parts of the State; information on all school attendance; lack of professional training on the part of the teachers; information showing the need of better school supervision; discovered that there were over 1500 rural schools that had less than 12 pupils in attendance, and that there was a great need of an improvement in the school courses in rural districts to make these schools meet the need of local rural communities.

The new laws provide for a superintendent for each county and a county school board. The county is further to be divided into subdistricts with superintendents over each. Teachers are required to take normal training in recognized schools. Weak districts are to receive state aid.

Superintendent Ivins gives the following digest of the law referring to agriculture.

"This was not an entirely new law but was a revision of the former Cahill law that provided for the teaching of agriculture in all schools outside of the city districts. It provides for the appointment of four State Supervisors of Agricultural Education as did the old law, but in the new draft these supervisors or inspectors of all subjects that are related to agriculture, instead of agriculture alone as was the case in the original draft. These Supervisors will also aid in the standardization of schools; encourage county fair boards to establish young peoples' agricultural exhibits at each annual county fair; give special addresses on agriculture and related subjects at teachers' institutes; farmers' institutes; and farmers' schools and prepare courses of study in agriculture and related subjects for the use of the schools."

THE SCHOOL GARDEN.

Childhood is the period of impression. The environment of the child will largely determine what his future attainments will be. If beauty, order, and high ideals are kept constantly before him his future will in many phases correspond to those early influences. On the other hand if immorality and indifference are his chief inspirations his chances for future enlargement are undoubtedly limited.

It is in this connection that we wish to speak of those things which have to do with the early influences of school children. There are many things which we might consider all of which would have their consideration; but at this time we will mention the importance of the home school garden.

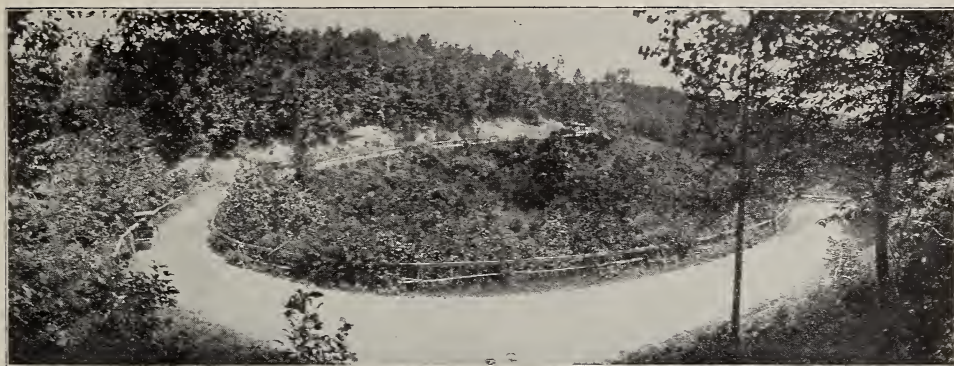
First of all, school children must have

something to do, whether after school hours or during vacation. They are busy energetic creatures with wonderful imaginations. Their energy should be directed in a profitable direction. Then school children should not have to look for a form of recreation—it should be supplied to them. If they are left to their own initiative, they will seldom select the most desirable influences. It is doubtful whether the “old swimming hole” which seems to be far famed in the history of many boys ever stimulated them to higher ideals. In addition to the fact that these gardens furnish recreation, they can be so managed as to furnish food for families especially in the larger cities. Last year in the city of Columbus, 500 different families were supplied with vegetables from 220 gardens.



THE HAND OF AN ARTIST.

—Courtesy Extension Department.



May News Notes

OVER THE BANQUET TABLE.

One of the most successful banquets ever given at Ohio State was held at the Ohio Union on the evening of April 17 when nearly three hundred students gathered to boost their college and the great cause of agriculture.

Prof. T. N. Carver of the U. S. Department of Agriculture, was the principal speaker of the evening and dwelt extensively upon the organization of rural interests. He emphasized the social responsibility of the individual since "effective team work and loyalty to the community are essential to the success of any rural civilization." Prof. Carver regards people who will not work together as "fundamentally non-social and immoral." He compared the intense neighborhood on co-operative spirit and loyalty of the people of Denmark and Sweden with the prevailing conditions in America where "people are jealous of their more successful neighbors because they have not learned to follow the example of those who have made a success."

In speaking of rural credit, Prof. Carver said, "As many farmers are suffering from too much credit as from too little. If unlimited liabilities will not work in America, it simply means

that no ten men will endorse each other's notes, and unless neighbors have confidence in one another the confidence of any one else cannot be expected." He also spoke of the landlord and tenant problem as one which must be solved by making the country attractive. He challenged the student body with the hardest kind of a task, that of organization of rural interests.

President Thompson spoke on "The By-Products of Farm Operation," and said that no man is big enough to live on the farm who is not big enough to look after the by products. Coach Wilce, T. L. Smith of the senior class, Prof. A. G. McCall, and J. F. Cunningham of The Ohio Farmer, also spoke at the banquet. Prof. Oscar Erf was toastmaster.

Two types of scholarships have been established in the college of agriculture. A scholarship was established good for three years in the short course in agriculture and horticulture, one to be assigned to each county this year and an additional scholarship in 1915 and 1916 making a total of three to each county, one to become available each year. The scholarships are to be used as a reward for the contestants in the junior

contests conducted by the agricultural commission, and one will be awarded to the highest ranking individual in each county who is not less than 17 years old.

Five scholarships good for four years in any of the four year courses in the agricultural college will be assigned to each of the four districts into which the state is divided by the state superintendent of education. A uniform competitive examination for these scholarships will be held in every first and second grade high school in the state on the second Friday in April of each year. The question for these examinations prepared by the Superintendent of Agricultural Education and approved by the Dean of the Agricultural College, will be on high school agriculture. The papers will be graded under the direction of the Supervisors of Agricultural Education and the awards will be made by the dean of the college.

Bristol's Recording Thermometer is a new appliance in the dairy department for self recording the temperature of milk or cream during pasteurization. This thermometer is required in all dairies in the large cities of the east where pasteurization is necessary. By this instrument the length and temperature of pasteurization can be told exactly.

The college of agriculture was very fortunate in procuring E. M. Tousley for a series of lectures upon Co-operation on April 21st and 22nd. Mr. Tousley who is Secretary of the Right Relationship League of Minnesota, and Editor of "The Cooperator," is an enthusiast along his line and an authority on co-operation. He dwelt chiefly upon the difference between corporations and co-operation and the import-

ance of interesting the farmers of our country to work together for their common good. "Real co-operative organizations," said Mr. Tousley, "are run upon the basis of manhood voting, rather than money. He who creates value by his services is entitled to the returns from the organization, and not the heavy stockholder who creates nothing. The old system of buying and selling must be broken down, and the co-operative plan must come in." The three main questions dwelt on by Mr. Tousley during his lectures were the organizations of co-operative associations, the distribution of farm products through such associations and the need of further legislation and interest among our farming people upon the subject. Mr. Tousley also spoke at the open meeting of the University Grange.

Preliminary steps are being taken to put in a drainage system in the 133 acres west of the Olentangy River, which were purchased by the university last fall. Part of this tract is planted to wheat and part is now being plowed for spring crops. Ten acres will be devoted to vegetable growing by a commercial horticulturist.

Prof. Livingston, who last semester was studying at Cornell and is now traveling in Europe, will be back at Ohio State next year to teach in the agronomy department.

There are now five counties which have agricultural experiment farms, maintained jointly by them and the state. Washington county was the latest added to the list when the state agricultural commission approved the purchase of a farm of 170 acres near Fleming, 12 miles from Marietta. Part

of the farm is especially adapted to fruit farming and part is a level suitable tract suitable for truck farming. A county agent will be kept on the farm by the state and the county will provide a foreman to travel over the county as an adviser to the farmers. Clermont, Miami, Paulding and Hamilton Counties already have experimental farms. Trumbull, Butler and Greene Counties are considering bond issues for the purchase of farms.

A bronze tablet to the memory of Dr. H. A. Weber, formerly of the agricultural chemistry department of the college of agriculture, has been designed and will be placed at the head of the stairs leading to the second floor of Townshend Hall. Before his death in 1912, Dr. Weber was very influential in the passage of pure food laws.

Ground has been broken for the wings on the Physics building which are to be constructed to accommodate the English department. Since the burning of the English building in March this department has been holding its classes in various buildings so that the need of a new structure has been keenly felt.

The date of the Franklin County Fair has been announced by the Secretary, W. G. Richards, as September 15, 16, 17 and 18. This fair is organized under the Agricultural Commission and according to the secretary is a non-profit making institution.

Prof. R. F. Griggs of the department of botany, addressed the last meeting

of the Agricultural Society on the subject of "The Kelps as a Source of Potash." Prof. Griggs was one of a commission sent by the federal government last spring to investigate these beds along the Pacific coast. Some of the results of his visit are given in this issue.

The annual wheat field meeting of the Ohio Agricultural Experiment Station will be held June 19. Prof. Alfred Vivian of the college of agriculture will give an illustrated lecture at the gathering on some of his travels around the world.

W. L. Clevenger of the dairy department, recently visited Indianapolis and the University of Illinois where some of the best milk and butter plants of the middle west are to be found.

A new course in Rural Economics (108) — Rural Community Life — has been approved by the Board of Trustees and will be given in the agricultural course next year.

Prizes to the amount of \$500 in live stock are offered by some of the counties in which the Boys' Judging Contests will be held this fall. Much interest is being shown and many of the older farmers have expressed their desire to enter the contests. Dairy cattle judging is receiving the most attention. Jackson, Cuyahoga, Madison, Seneca, Montgomery, Muskingum, Darke, Gallia, Lake, Fulton, Washington, Hancock, Morgan, Preble, and Putnam are the counties which have arranged for the contests.



—Courtesy Extension Department.

EXTENSION NEWS.

"The Future of Secondary Agriculture" was the subject of an address by Prof. A. B. Graham of the Extension Department of the College of Agriculture before the Michigan Society for the promotion of Agricultural Education on April 24, at Lansing, Michigan.

"Social Aspects of Rural Life" is the subject of lectures which Prof. Graham has been giving before many farmers' clubs in the state during the past few weeks.

Announcement was made after a recent meeting of the Ohio Agricultural Commission that the agricultural extension work in the state will be conducted under the direction of the college of agriculture as it has been in the past. This action continues the work that has been so successfully conducted by the university during the past ten years. With the state appropriations available for this kind of work and the assistance promised by the federal government, it is probable that the scope of extension work in Ohio will be enlarged greatly in the future. As in previous years the one week schools in the different counties in the state will be the main feature of the work. Demonstrations, meetings in the fields, and home economics will be emphasized more in the future.

Some of the fundamental factors in growing strawberries, raspberries, blackberries, and currants are dealt with in a new bulletin issued by the extension department of the college of agriculture. The author of the bulletin is R. B. Cruikshank of the department of horticulture. Another neatly illustrated bulletin on the subject of "Tress for Shade, Shelter and Ornament," written by Prof. W. R. Lazenby; and a bulletin on "Clover," by C. S. Wheeler, are available at this time. They may be secured by writing to A. B. Graham at Columbus.

H. E. Eswine of the Extension Department, has been giving lectures in many high schools of the state on "Corn," "Milk," and other similar subjects. He spends several days at each school, the entire time of the school being devoted to the teaching of agriculture.

Plans for Rural Life Week which will be held at the University in August are now nearing completion. The rural as well as city ministers will be asked to co-operate in the work.

A great deal of practical work is being done by the students studying Poultry Husbandry under Prof. Jacoby this spring. There are at present about 3,000 eggs in the incubators and all these are being cared for by students. Most of the chicks hatched will be various strains of the Leghorns, but there are some eggs from nearly all the other breeds. Students are also doing practical work in the feeding and caring of fowls. The enrollment in these courses is greater than it has ever been before and the work done is most gratifying.



HORTICULTURE.

Reputation is something for the farmers to cultivate. An example of the power of reputation in selling fruit is given by our own department in Horticulture, who are already receiving orders for the cherries, apples and peaches which make up the summer crop in the university orchards, because they have pleased the buyers in the past. The demands for vegetables from the university gardens is equally as great throughout the summer months. Consumers crave produce that is freshly picked and are willing to come long distances to procure such green stuff.

The department of Horticulture has developed into an extensive employment agency for students who are skilled in tree pruning and the planting of grounds. There has developed a wide demand for this kind of service among Columbus people and farmers of this vicinity.

With the work on the new buildings upon the campus there has been going on hand in hand exhaustive landscape gardening. Much of the shrubbery which formerly surrounded the old

buildings is being planted in new groups, and much new shrubbery has been purchased. The campus beautiful is more inviting this year than ever before.

The classes in Pomology recently made a night trip to the orchard of Frame Brown, to make observations on the use of oil heaters as a frost preventative. This orchard consists of one hundred acres of bearing trees, and is located several miles north of Columbus. Mr. Brown is very enthusiastic on the value of heaters in his orchard and believes he has saved many bushels of fruit this season through their use.

The department of Horticulture is planning to place nearly all the vegetable plots under the Skinner irrigation system during the coming season. The gardens across the river will be devoted exclusively to early sweet corn and potatoes, while smaller crops will be grown on the plots behind the horticultural building. R. R. Fry, '15, is the university gardener.

The wide name Ohio State has created for her "canning" cherries has caused the department to put forth extra effort to make this year's crop a banner one. Extra precaution has been taken to combat the curculio by careful spraying. The 3 gallon Hamilton oil heaters which were used during April and May proved very successful upon several occasions. A. S. Kiefer, '15, was in charge of the heating work.

Recent frosts are said to have done little damage in the state and especially where the heaters were used.



CHAMPION CHEVIOT RAM, OWNED BY
R. & W. POSTLE.

ANIMAL HUSBANDRY.

Prof. W. M. Barrows of the Zoology Department spoke before the April meeting of the Saddle and Sirloin Club upon "Animal Breeding," explaining heredity as an extremely strong factor. He says lack of careful records has caused the animal breeder to make woe-ful mistakes.

Prof. Edward A. Trowbridge of the University of Missouri, has been secured to act as judge at the Ohio State Horse Show, to be held on the University Campus May 9. His presence will insure careful and considerate judgment.

The seventh annual Sheep Shearing Contest, held April 16 under the auspices of the animal husbandry department, was well attended. Keen competition was shown in the various classes. The events were educational as well as

competitive, since they afforded many young men the opportunity of seeing such work done by experts. The fact was revealed that Ohio possesses men interested in sheep husbandry who are very handy with the clippers.

Liberal prizes were awarded in each of the classes. J. W. Hammond, of the Ohio Experiment Station, and Professor H. E. Allen, of Purdue University, were the judges. The first and second prize winners in the various shearing events follow:

Shearing with hand shearing machines:

1. F. B. Elliot, London..... 96%
2. George Shaw, Marengo..... 93%

Shearing with power machines:

1. Wendell Beebe, Delaware... 94%
2. George Shaw, Marengo..... 88%

Shearing with hand shears:

1. George Shaw, Marengo..... 90%
2. J. F. Parthemore, Marengo.. 88%

Shearing with hand shears by a boy not over 16 years old:

1. L. D. States, Wilmington.

The handling and tying of the fleece:

1. C. V. Harden, Millersport.
2. J. V. Cramer, Kimbolton.

The best time was made by Wendell Beebe with the power machine. He sheared a sheep in five minutes and fifteen seconds.

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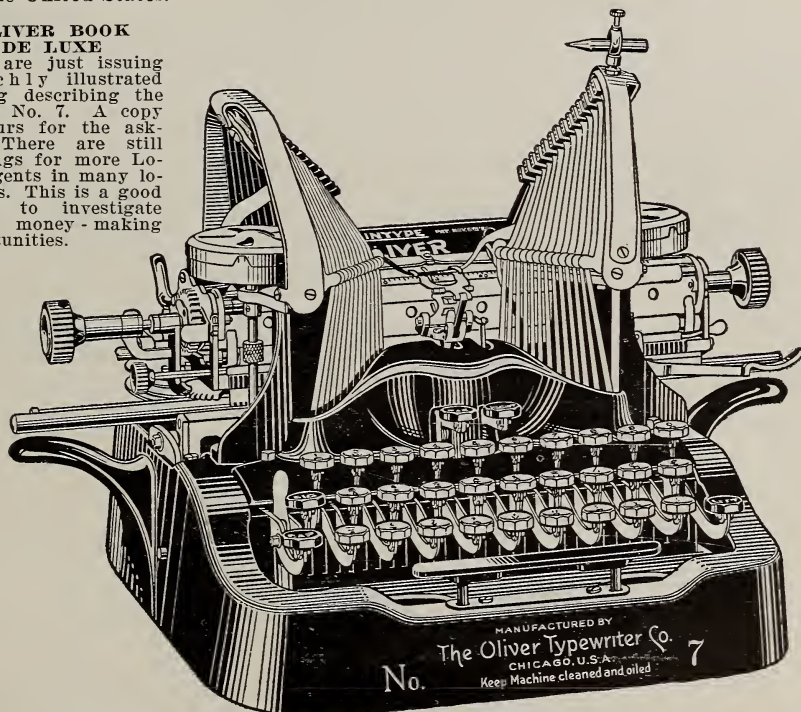
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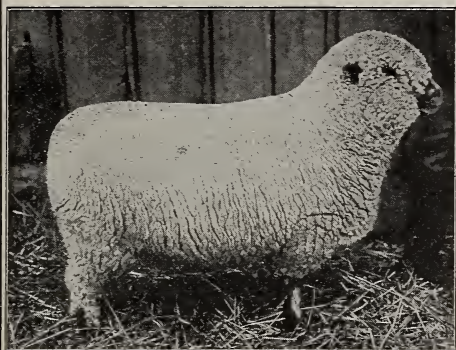
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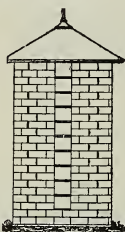
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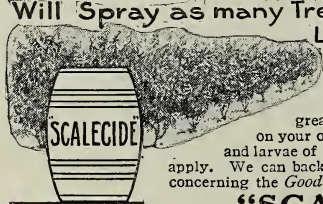
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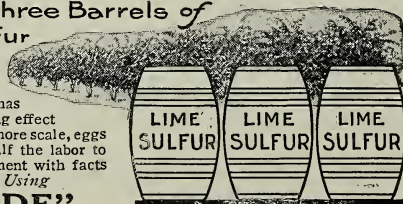
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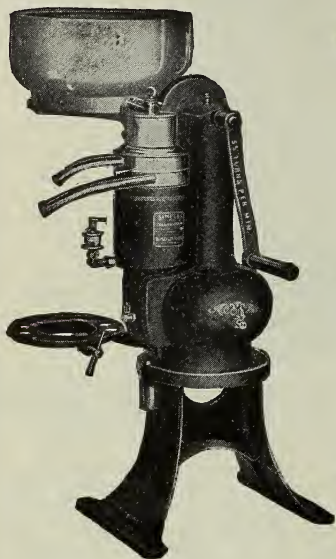
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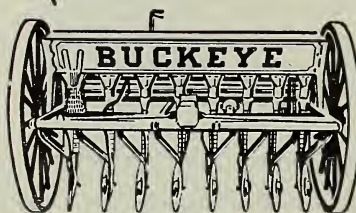
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BUCKEYE DRILLS have many exclusive features to be had on no other Drill—features that mean much to the farmer. It is the only drill having the fertilizer hopper lined with galvanized metal; the only drill with a glass cone fertilizer feed. The Buckeye is the only drill that has a nested cone gear driver. The Buckeye is the drill with an absolute force feed that will sow all seeds accurately and put them in the ground at an even depth. Made in all styles and sizes. Go to your local dealer and insist on seeing the Buckeye Drill. Send for catalog.

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We manufacture and sell eleven brands of fertilizers. Our "Wheat Special" is the highest grade of acid phosphate sold in **OHIO**.

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Means more to us than it does to all other manufacturers of this product, for the following reasons:

The plant where "Daybreak Rock Phosphate" is prepared represents a capacity and an investment greater than those of all our competitors.

We own over 50 per cent. of the raw material remaining in the Tennessee field, to be used for the manufacture of Rock Phosphate; and while other manufacturers are cleaning up the low grade phosphate left behind from previous mining, and calculating the future of their business in terms of years; we are opening new mines, and making our future plans in terms of generations.

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When we began the manufacture of Rock Phosphate the farmers were buying a quality that contained 200 to 240 pounds of Phosphorus per ton; and while there was usually no guarantee of fineness, the average product was ground so that 90 per cent. would pass a screen having 3,600 openings to the square inch.

We offered a product guaranteed to contain a minimum of 260 pounds of Phosphorus per ton, and ground so that 95 per cent. would pass a screen with 10,000 openings to the square inch.

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is always given by the manufacturer who is best able to furnish them, and who has most at stake in the future of the business; and that the Ohio farmer appreciates the truth of this statement is shown by the fact that we are now supplying over one-half of the total Rock Phosphate used in your state.

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PHOSPHATE ROCK AND LIMESTONE



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We solicit your business on merit. Let us quote you now.

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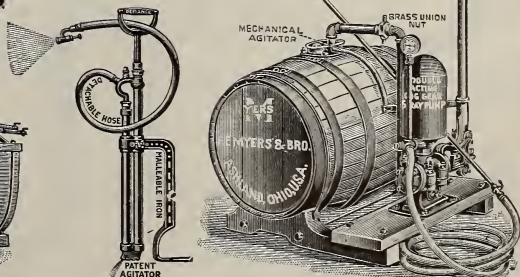
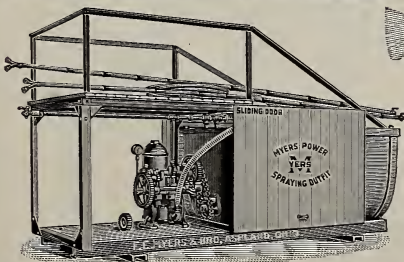
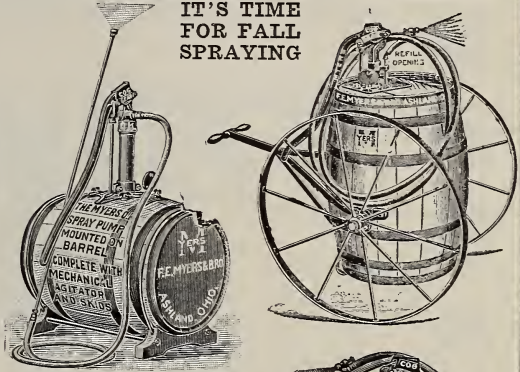
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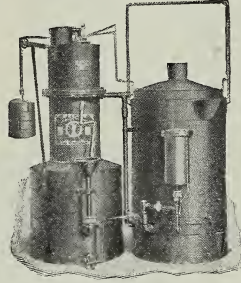
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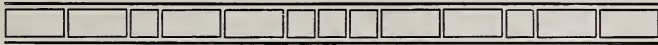
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